AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application.

1. (Currently Amended) A tool insert comprising an insert body and an abrasive tip, the abrasive tip and the insert body containing mating geometric features, wherein the abrasive tip is retained in the insert body primarily by mechanical forces derived from irreversible deformation of the mating geometrical features on the abrasive tip and/or the insert body.

2. (Cancelled)

3. (Original) The tool insert of claim 1, wherein the geometric features are interlocking.

4. (Original) The tool insert of claim 1, wherein at least one additional abrasive tip is retained in the insert body to form a multi-tipped tool insert.

5. (Previously Presented) The tool insert of claim 1, wherein the abrasive tip comprises a material selected from the group consisting of silicon nitride, silicon carbide, boron carbide, titanium carbide, fused aluminum oxide, ceramic aluminum oxide, heat treated aluminum oxide, alumina zirconia, iron oxides, tantalum carbide, cerium oxide, garnet, cemented carbides (e.g. WC-Co), synthetic and natural diamond, zirconium oxide, cubic boron nitride, laminates thereof, mixtures, and composite materials thereof.

6. (Previously Presented) The tool insert of claim 1, wherein the insert body comprises a material selected from the group consisting of metals, steels, alloys, thermoplastic polymers, thermoset polymers, ceramics, cemented carbides, cermets, and mixtures thereof.

7. (Original) The tool insert of claim 1, wherein the insert is further heat treated at temperatures above 300^{0}C.

8. (Original) The tool insert of claim 1, wherein the tool insert is coated with at least one of a nitride, carbide, carbonitride, oxide, boride, or oxynitride of elements selected from a group consisting of B, Ti, Al, Si, Ga, refractory hard metals, transition metals, and rare earth metals, or complexes and combinations thereof.

9. (Original) The tool insert of claim 1, wherein the tool insert comprises at least one additional device to improve the retaining forces that retain the abrasive tip in the insert body.

10. (Previously Presented) The tool insert of claim 9, wherein the at least one additional device is selected from the group consisting of a spot weld, a thin metal film, a foil, an adhesive foil, a wedge, and combinations thereof.

11. (Currently Amended) A method for forming a cutting tool insert, said method comprising the steps of:

providing an abrasive tip and an insert body, each having mating geometrical features;

joining the abrasive tip to the insert body through the respective mating geometrical features causing a an irreversible deformation in at least one of the mating features, the deformation providing mechanical forces sufficient to hold the abrasive tip in the insert body.

12. (Original) The method of claim 11, wherein the joining of the abrasive tip and the insert body is accomplished through a press-fitting of the mating geometric features.

13. (Previously Presented) The method of claim 11, wherein the joining of the abrasive tip and the insert body further comprises shrink-fitting of the mating geometric features.

14. (Original) The method of claim 11, wherein the joining of the abrasive tip and insert body is accomplished through at least one of a molding, forming, forging, casting the insert body around the abrasive tip, and combinations thereof.

15. (Original) The method of claim 11, wherein the mating geometric features having dimensions that create an interference fit.

16. (Original) The method of any of claims 11, wherein the mating geometrical features are interlocking.

17. (Original) The method of any of claims 11, wherein at least one additional abrasive tip with geometrical features mating with the insert body is provided, forming a multi-tipped tool insert.

18. (Previously Presented) The method of claim 11, wherein the abrasive tip comprises a material selected from the group consisting of silicon nitride, silicon carbide, boron carbide, titanium carbide, fused aluminum oxide, ceramic aluminum oxide, heat treated aluminum oxide, alumina zirconia, iron oxides, tantalum carbide, cerium oxide, garnet, cemented carbides (e.g. WC-Co), synthetic and natural diamond, zirconium oxide, cubic boron nitride, laminates thereof, mixtures, and composite materials thereof.

19. (Previously Presented) The method of claim 11, wherein the insert body comprises a material selected from the group consisting of steels, alloys, metals, thermoplastic polymers, thermoset polymers, ceramics, cemented carbides, cermets, and mixtures thereof.

20. (Original) The method of claim 11, further comprising the step of heat treating the tool insert at a temperature of at least 300°C.

21. (Original) The method of claim 11, further comprising the step of coating the tool insert with at least one of a nitride, carbide, carbonitride, oxide, boride, or oxynitride of elements selected from a group consisting of B, Ti, Al, Si, Ga, refractory hard metals, transition metals, and rare earth metals, or complexes and combinations thereof.

22. (Original) The method of claim 11, further comprising the step of providing at least one additional device to improve the retaining force for retaining the abrasive tip in the insert body.

23. (Previously Presented) The method of claim 22, wherein the at least one additional device is selected from the group consisting of a spot weld, a thin metal film, a foil, an adhesive foil, a wedge, and combinations thereof.

24. (Previously Presented) The method of claim 21, wherein said coating is formed by a technique selected from the group consisting of a physical vapor deposition, a chemical vapor deposition, a spraying process using an air sprayer, a painting process employing a roller, a thermal spray process, a thermal injection process, and combinations thereof.

25.-38. (Cancelled)